

Supplementary Figures (Odho *et al.*)

Supplementary Figure 1. Mapping of the WDR5 interaction region in WDR5:

A. A schematic diagram showing the extent of the sequence included in RbBP5 deletion constructs and indicating whether they were able to pull-down WDR5. **B.** Co-precipitation of WDR5 by GST tagged RbBP5 constructs R3, R4 and R5 immobilised on glutathione affinity resin and analysed on polyacrylamide gel stained by Coomassie blue (SeeBlue Plus2 markers, Invitrogen: I = RbBP5 input: R = RbBP5 bound to resin: R+W = RbBP5 resin plus WDR5: W = glutathione resin plus WDR5). **C.** Co-precipitation of WDR5 by RbBP5 constructs R1-S (His-SUMO tag, R3 and R6 (GST tag) immobilised on the complimentary affinity resin and analysed on polyacrylamide gel stained by Coomassie blue (Novex Sharp markers, Invitrogen: (I = RbBP5 input: R = RbBP5 bound to resin: R+W RbBP5 glutathione resin plus WDR5: W_T = talon resin or W_G glutathione resin plus WDR5). **D.** Co-precipitation of WDR5 by GST tagged RbBP5 constructs R3, R7 and R8 immobilised on glutathione affinity resin analysed on polyacrylamide gel stained by Coomassie blue (Novex Sharp markers, Invitrogen: I = RbBP5 input: R = RbBP5 bound to resin: R+W = RbBP5 resin plus WDR5: W = resin plus WDR5).

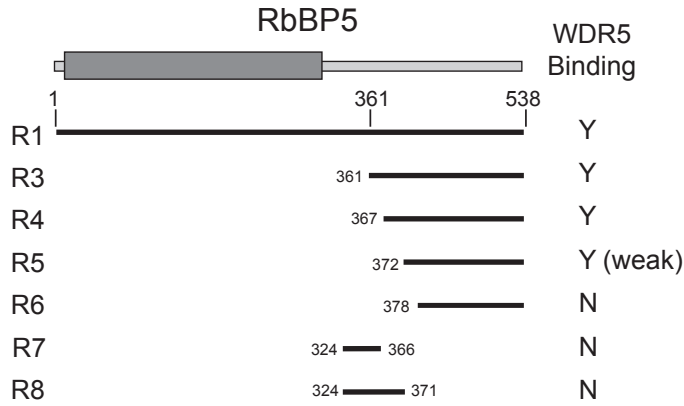
Supplementary Figure 2. Surface representation of the WDR5 structure coloured by electrostatic potential showing the RbBP5 interaction face for a range of RbBP5 orthologues. The structures were derived by threading the sequence onto the mouse protein structure (PDB code: 2GNQ) using the PHYRE server (Protein Homology/analogy Recognition Engine; Kelley LA and Sternberg MJE (2009). *Nature Protocols* 4, 363 - 371). The binding groove is flanked by a conspicuous area of positive charge (blue).

Supplementary Figure 3. Disruption of binding of RbBP5 valine mutants to WDR5.

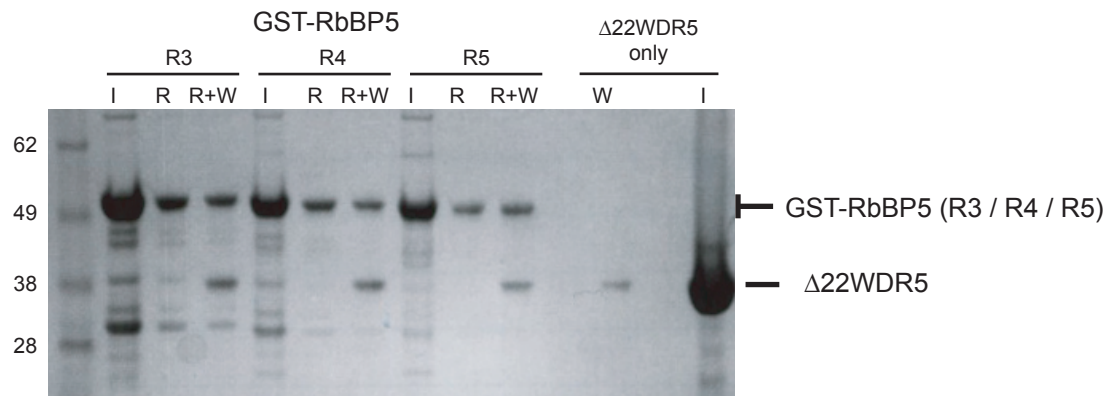
A. Co-precipitation of WDR5 by His-tagged RbBP5 wild-type and V375E with His-SUMO tag control (Novex Sharp markers, Invitrogen: I = RbBP5 input: R = RbBP5 bound to resin: R+W RbBP5 Talon resin plus WDR5). **B.** Co-precipitation of WDR5 by His-tagged RbBP5 wild-type and V377E with His-SUMO tag control (Novex Sharp markers, Invitrogen: I = RbBP5 input: R = RbBP5 bound to resin: R+W RbBP5 resin plus WDR5: W = Talon resin plus WDR5). Co-precipitation of WDR5 by the glutamate mutants is reduced to levels that are equivalent to the levels of the negative control of WDR5 binding to resin alone.

Odho et al. Supplementary Figure 1

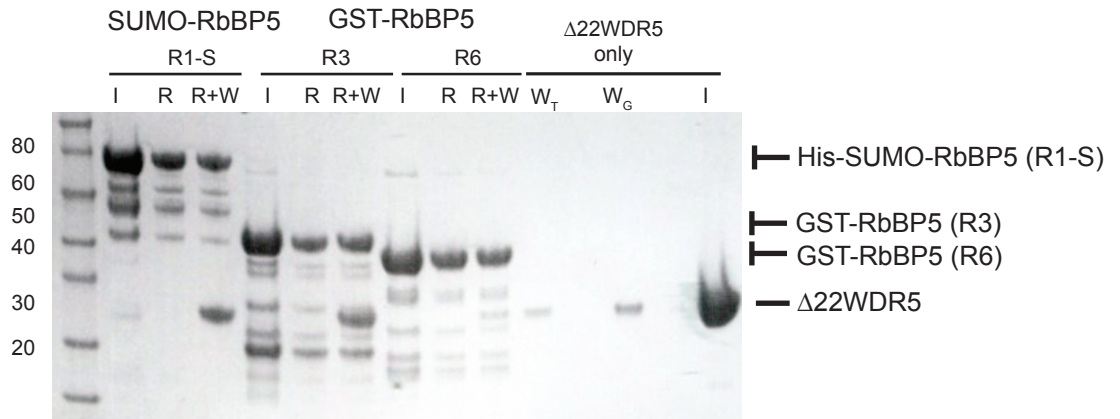
A.



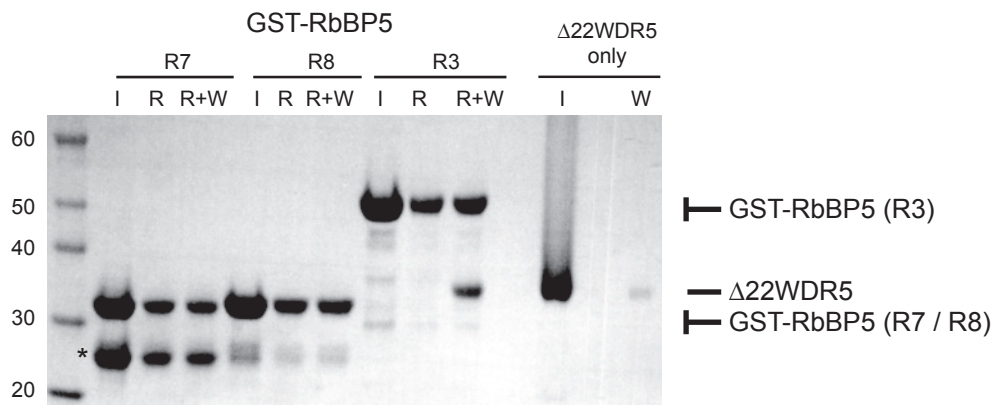
B.



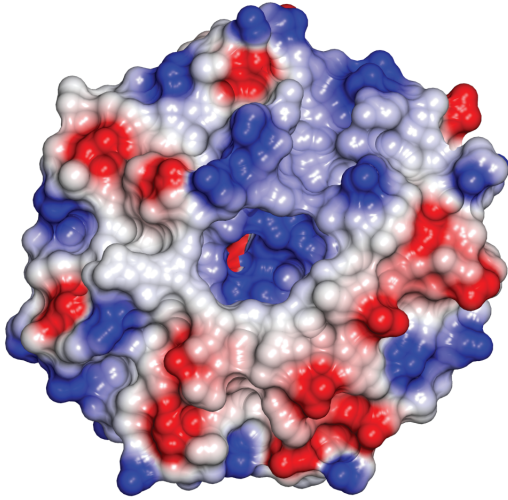
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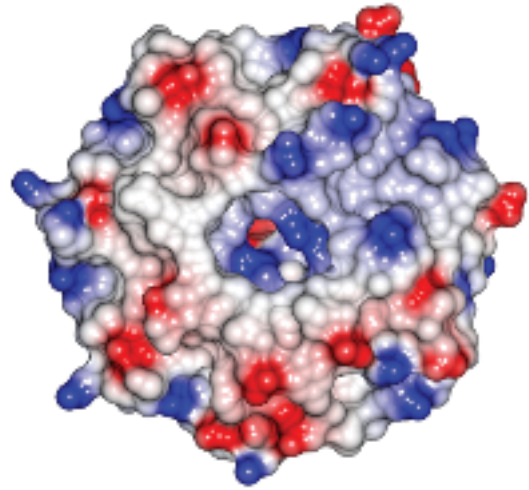
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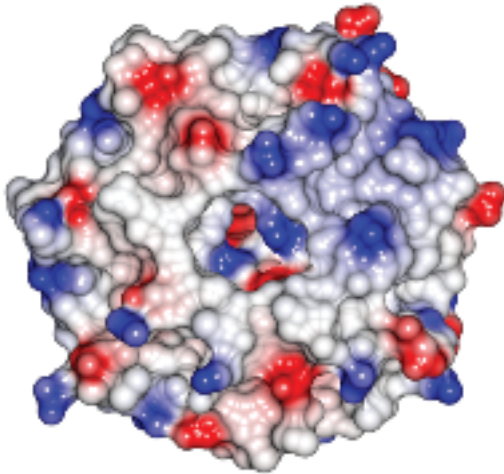
*GST contamination



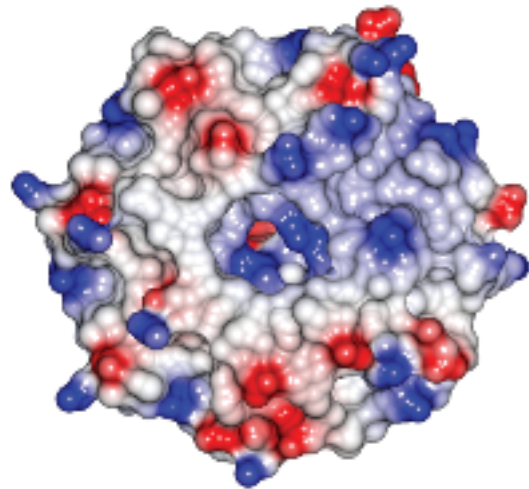
Mouse



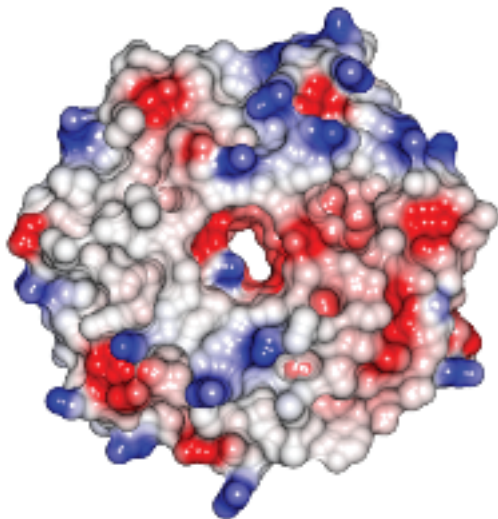
Zebrafish



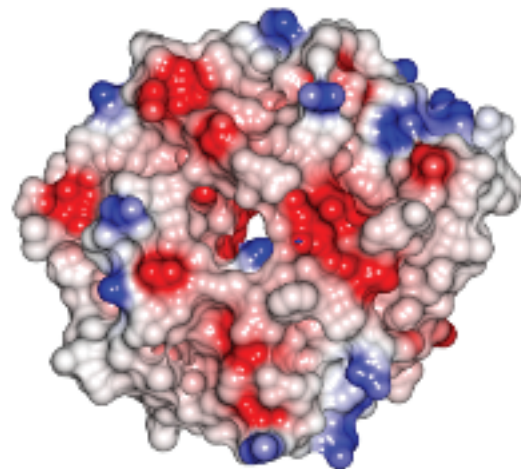
Worm



Drosophila

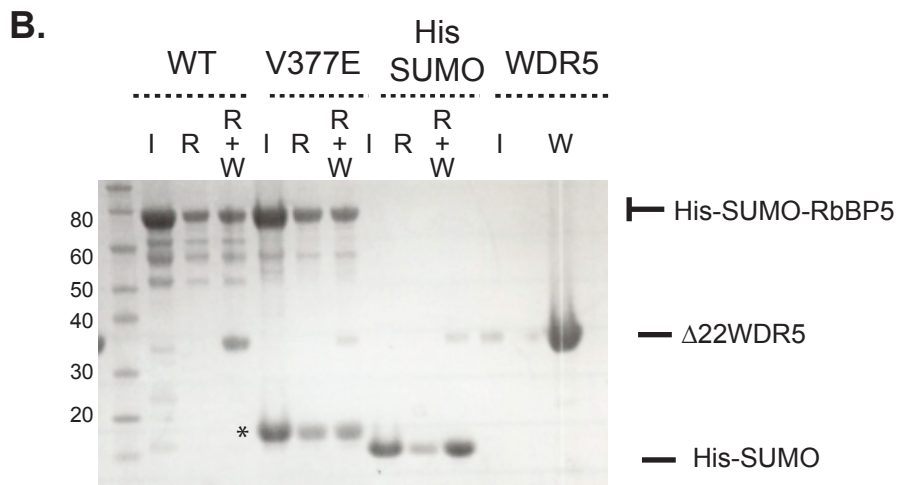
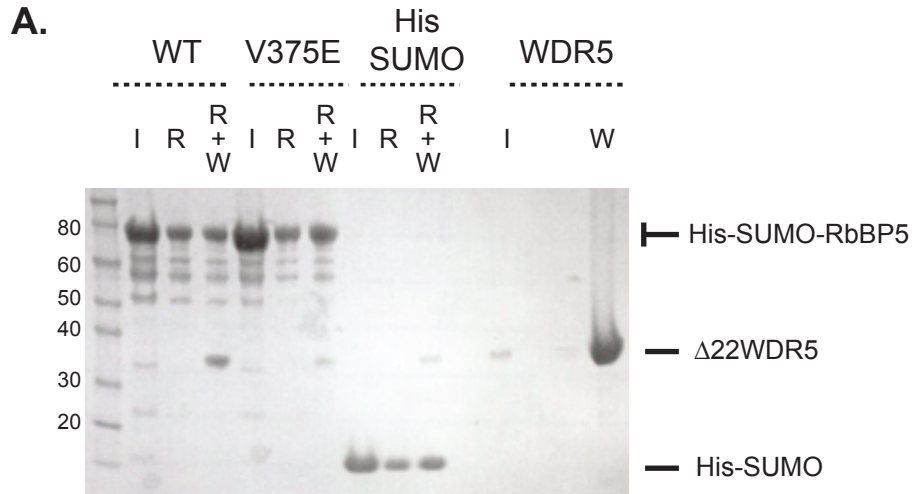


Pombe



Cerevisiae

Odho et al. Supplementary Figure 3



* unidentified contaminant